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Year: 2016

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ZORA URL: <https://doi.org/10.5167/uzh-126575>

Conference or Workshop Item

Originally published at:

Favrot, Claude (2016). Newly recongnized skin diseases. In: British Veterinary Dermatology Study Group, London, Great Britain, 24 October 2016 - 25 October 2016, s.n..

NEWLY RECOGNIZED SKIN DISEASES

Prof Dr Claude Favrot

Muco-cutaneous lupus

The diagnosis of canine erosive chronic lesions with histopathological changes of lupus erythematosus affecting mainly the mucocutaneous junctions is still largely unclear. In dogs, apart of systemic lupus erythematosus, three other forms are well described and are confined to the skin: discoid lupus erythematosus, exfoliative lupus and vesicular lupus.

The authors described in this article 21 dogs with these changes [1]. Interestingly half of them were German shepherd dogs or their cross. The female/male ratio was 1.3 and ages at onset ranged from 3 to 13 years. The first lesions were erosions occurring mainly around the anus, genitalia, eyelids, nose or lips. In most cases more than one body area was affected and lesions were virtually always symmetrical. Dyschezia and dysuria were also frequently observed. Interestingly, hyperpigmentation was more frequently observed than depigmentation. Systemic signs, except those associated with pain were absent.

Classical immunosuppressive treatments with glucocorticoids(topical or systemic) , niacinamide with cyclin antibiotic (doxycycline, tetracycline), cyclosporine or tacrolimus were virtually always associated with marked improvement or complete resolution of the clinical signs.

On the histopathological point of view, lymphocytic-rich interface dermatitis with evidence of basal keratinocyte damage such as apoptosis and/or hydropic changes were seen in all cases, confirming the diagnosis of lupus erythematosus. Suprabasal keratinocyte apoptosis was present in half of the cases while vasculitis was never noticed. Neutrophilic changes with or without bacteria were also very frequently observed.

Estradiol-induced alopecia

Estrogen plays a role in the control of the hair cycle and in various diseases such as Sertoli cell tumor-associated alopecia and hyperoestrogenism-associated hair loss. In dogs treated with estrogen for urinary incontinence, alopecia is also sometimes observed. In humans, estrogen is used to treat menopausal clinical signs. For such indication, estradiol-based creams or gels are often used. As estradiol easily penetrates the skin. Skin penetration of estradiol in dogs in close contact with estradiol-treated owners could consequently be expected. This syndrome is known since years but an interesting review of five cases was recently published [2].

The main recorded information was that all owners used a gel, confirm close contact with the dogs and that all dogs were allowed to sleep in the bed of the owners.

On the clinical point of view, alopecia was usually symmetrical and affected mainly the abdomen the shoulders, the inner thighs but also the neck and, in one dog, the muzzle. The alopecia was sometimes very well demarcated and in one dog, the skin was clearly hyperpigmented. No signs of skin inflammation was noticed on the other dogs. Histological examination confirms hair follicle arrest in kenogen or telogen. Interestingly however, not all hair follicle were blocked and some anagen follicle were visible in almost all skin biopsies. Trichilemmal keratinization was also present. Estradiol levels were measured in two dogs and were above the limit in only one. Signs resolved in all dogs after contact discontinuation. This improvement was complete in four out of five dogs and occurs within a few months. On one of these dogs, neck alopecia remains on the neck.

Alopecia universalis

Alopecia areata is a well-known and not uncommon T-cell mediated autoimmune disease causing patchy alopecia in various mammals including dogs and horses. In human beings, the disease may, in some patients, progress to alopecia totalis (all hairs on the scalp are lost) or alopecia universalis (eyebrows and eyelashes are lost).

Recently a case of alopecia universalis was described. It seems to be the first report of this generalized disease in dogs [3].

The dog was a nine-year old mongrel presented with a progressive alopecia lasting of 18 month duration. The owners reported that the hair loss began on the head and extended progressively to the trunk and limbs. Interestingly, when the dog was presented to the reporting authors, all hairs were lost, including eyelashes and whiskers. Some rare hairs remained on the tip of the tail. The dog was otherwise healthy and general examination was unremarkable. As well, all blood test were unremarkable.

Histopathological examination showed a very prominent hair follicle atrophy and a limited perisithmal and peribulbar lymphocytic proliferation. As peribulbar lymphocytic inflammation is a typical feature of alopecia areata, a diagnosis of alopecia universalis was made.

The dog was put on cyclosporine and ketoconazole and hair regrowth was rapidly observed. Interestingly, the pattern of hair regrowth followed the pattern of hair loss but in a reverse way, so that the last skin affected regions were the first where regrowth was observed.

Exfoliative dermatitis in cats: not always thymoma-associated

Feline exfoliative dermatitis is a skin disorder where large and adherent scales are observed on larger part of the body. This condition is often associated with alopecia and affects mainly middle-aged cats. This pattern was often described in association with thymoma and in this case, tumour removal is followed by complete remission of the clinical signs [4]. The pathogenesis of the condition is unclear but it is suspected that autoreactive T lymphocytes induced by thymoma act on keratinocytes in a similar manner to graft-versus-host reaction.

In this recent paper, the authors described 18 cases of exfoliative dermatitis with the exact same clinical and histopathological signs than thymoma-induced ones, but where thymoma was absent [5]. Seven were males while 11 were female. Ages ranged from 1.5 to 15 years. The great majority were European short-haired cats. Apart of the classical clinical signs, 16 out of 18 cats were apathic or lethargic but internal diseases were identified in only four of them.

On the histopathological point of view, these cats were undistinguishable of thymoma-induced disease suggesting a similar pathogenesis. In fact, interface dermatitis, mural interface folliculitis and sebaceous adenitis were virtually always present.

PCR for herpes was always negative and no specific aetiology could be identified. Most cases were treated with immunosuppressive drugs while other received only topical treatment or antibiotics. Spontaneous remission was observed in two cases.

This report strongly suggests that exfoliative dermatitis in cats is not a particular disease but a reaction pattern. A common pathogenesis involving autoreactive T lymphocyte is likely.

Stiff-skin syndrome in West-Highland-White-Terriers

In humans, stiff skin syndrome and localized or systemic scleroderma are characterized by dermal fibrosis. These conditions present clinically with induration of the skin with or without joint, vessels and internal organs involvement. On a genetic point of view, they are characterized by mutations of the FBN1 or ADMATSL2 genes.

Recently, colleagues reported two cases resembling stiff skin syndrome in two West-Highland White Terriers [6]. In these cases, the genes mentioned above were studied but were not mutated.

Both dogs presented with markedly indurated skin. The skin was attached to the underlying tissues. Additionally, incomplete closure of the eyes and mouth were obvious. Unlike affected humans, joints were not affected in these dogs. Both dogs were initially presented for skin infections, especially furunculosis.

Histologically, dermis and subcutis were markedly thickened and collagen fibres were increases in diameter. In one dog, the syndrome was progressive and involved finally the oral mucosa and pharynx.

Aggressive Bowenoid in situ Squamous cell carcinoma

Bowenoid in situ squamous cell carcinomas (BISC) is an uncommon papillomavirus-induced skin tumor of elderly cats [7]. This condition usually begins with benign viral plaques that progress slowly to BISC, a condition that remains usually confined to the epidermis and do not invade the dermis [7]. One case of extensive and metastatic BISC was described a few years ago in a Devon rex cat[8]. Very recently two additional cases were described in the same breed, confirming that this breed is predisposed for a severe form of an otherwise benign condition [9].

Interestingly, the two newly affected cats were rather young (5- and 8-year-old, respectively). Both cats were regularly observed sun bathing. They presented initially with classical crusty plaques disseminated on the head and trunk. Systemic signs developed rather rapidly. Both cats were euthanized and metastases in the lung were confirmed in one cases. FcPV2 virus nucleic acids were amplified in the lesions of the two cats, including in the lung of the second cat. Histopathologically, lesions presented sometimes typical changes associated with PV, while other were fully developed squamous cell carcinomas. Actinic keratosis lesions were also present

These cases demonstrate that UV light and papillomaviruses may sometimes both contribute to the development of invasive SCC.

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